LAB6 : Pointers

Task1: Swap Two Numbers / Variables using Pointer :

```c
#include "stdafx.h"
void swap(int *num1, int *num2) {
	int temp;
	temp = *num1;
	*num1 = *num2;
	*num2 = temp;
}

void main() {
	int num1, num2;

	printf("\nEnter the first number : ");
	scanf_s("%d", &num1);
	printf("\nEnter the Second number : ");
	scanf_s("%d", &num2);

	swap(&num1, &num2);

	printf("\nFirst number  : %d", num1);
	printf("\nSecond number : %d\n", num2);
}
```

Output

Enter the first number : 12

Enter the Second number : 22

First number : 22

Second number : 12

Task2: Add Two Numbers Using Pointer

In this program we are going to accept two numbers from user using pointer. After accepting two numbers we are going to add two numbers by using de-reference operator in Pointer.

```c
#include "stdafx.h"
void main()
{
	int *ptr1, *ptr2;
	int num, a, b;
	ptr1 = &a;
	ptr2 = &b;

	printf("\nEnter two numbers : ");
	scanf_s("%d%d", ptr1, ptr2);

	num = *ptr1 + *ptr2;

	printf("Sum = %d", num);
}
```

Output

Enter two numbers : 2 3

Sum = 5

Task3: Program using pointers to read in an array of integers and print its elements in reverse order.

```
#include "stdafx.h"
void main()
{
        int i, arr[5];
        int *ptr;

        ptr = arr;

        printf("\nEnter 5 integers into array:\n");
        for (i = 0; i < 5; i++) {
                scanf_s("%d", (ptr + i));
        }
        printf("\nElements of array in reverse order are :");

        for (i = 4; i >= 0; i--)
                printf("\nElement[%d] is %d  ", i, *(ptr + i));
}
```

Output

Enter 5 integers into array : 11 22 33 44 55

Elements of array in reverse order are :

Element[4] is : 55

Element[3] is : 44

Element [2] is : 33

Element [1] is : 22

Element [0] is : 11

Task4: Write output of the following pogram:

```
#include "stdafx.h"
void main()
{
        int* pc;
        int c = 22;
        pc = &c;
        printf("Address of pointer pc:%d\n", pc);
        printf("Content of pointer pc:%d\n\n", *pc);

        c = 11;
        printf("Address of pointer pc:%d\n", pc);
        printf("Content of pointer pc:%d\n\n", *pc);

        *pc = 2;
        printf("Value of c:%d\n\n", c);

}
```
Output

Address of pointer pc:4062248

```
Content of pointer pc:22

Address of pointer pc:4062248
Content of pointer pc:11

Value of c:2
```

Task5: Program to find the sum of six numbers with arrays and pointers.

```c
#include "stdafx.h"
void main()
{
        int i, f[6], sum = 0;
        printf("Enter 6 numbers:\n");
        for (i = 0; i<6; ++i)
        {
                scanf_s("%d", (f + i)); // (class+i) is equivalent to &class[i]
                sum += *(f + i); // *(class+i) is equivalent to class[i]
        }
        printf("Sum=%d", sum);

}
```
Output

Enter 6 numbers:

2

3

4

5

3

4

Sum=21